Common Proper Motion Search for Faint Companions Around Early-Type Field Stars - Progress Report

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September 30, 2005

Abstract. The multiplicity of early-type stars is still not well established. The derived binary fraction is different for individual star forming regions, suggesting a connection with the age and the environment conditions. The few studies that have investigated this connection do not provide conclusive results. To fill in this gap, we started the first detailed adaptive-optic-assisted imaging survey of early-type field stars to derive their multiplicity in a homogeneous way. The sample has been extracted from the Hipparcos Catalog and consists of 341 BA-type stars within ∼300 pc from the Sun. We report the current status of the survey and describe a Monte-Carlo simulation that estimates the completeness of our companion detection.

Keywords: stars:binaries:general, stars:binaries:visual, stars:early-type

1. Introduction

The multiplicity of pre-main sequence (PMS) and main sequence (MS) late-type stars have been extensively studied: Duquennoy & Mayor (1991), Reipurth & Zinnecker (1993), Prosser et al. (1994), Brandner et al. (1996). PMS late-type stars in low-density clouds like Taurus show higher binary fractions than PMS late-type stars formed in massive and dense star forming regions (SFR) like Orion. This difference was explained with an environmental dependence of the binary fraction: low-mass stars born in dense SFRs show a higher probability of dynamic interactions with more massive members, so that they are ejected resulting in a low binary fraction, as shown by Sterzik & Durisen (1995). On the other hand, stars in low-density SFRs undergo low rate of stellar encounters, resulting in a higher binary fraction.

It is unclear if this result remains valid for early-type stars, mostly because of the difficult detection of faint companions near bright O- and B-type stars. The works of Petr et al. (1998), Preibisch et al. (1999) and Shatsky & Tokovinin (2002) indicate that the binary fraction of early-type stars varies from one SFR to another but current statistical basis is still not solid enough. The age of the SFRs can also affect the binary statistics: older systems are expected to have undergone through more

dynamical interaction, reducing their binarity fraction in comparison with the younger ones, as point by Tokovinin et al. (1999).

2. The Survey

The cluster multiplicity studies can cover only a limited range of density and age. This prompted us to estimate the binarity fraction of a representative, volume-limited sample of early-type field stars. We designed a survey able to detect at $\sim 10\sigma$ level an M4-type companion at the mean distance of our sample ($\sim$200 pc) down to 0.4 arcsec separation from 100 Myr old A-type primary. The companions around B-type stars will be younger ($\sim$10 Myr), brighter, and easier to detect. Last but not least, the physical nature of the candidate components is verified by their common proper motion. Our goal is to compare the properties such as incidence and mass ratio of the multiple stars in the field and in different star-forming regions.

3. Sample Selection

The sample stars were selected according to the following criteria:

- Apparent color $B-V \leq 0.2$ mag - conservative criterion met by all unreddened BA stars, and a few contaminating later-type stars. The spectral types for all stars were verified to be BA.
- The sample contains field stars only. Members of the OB-associations listed in de Zeeuw et al. (1999) were excluded.
- Distance D$\leq$300 pc from the Sun (HIPPARCOS). At D=300 pc the telescope's diffraction limit of 0.07 arcsec corresponds to 21 A.U (Shatsky & Tokovinin (2002) probed separations 45-900 A.U).
- Proper motions $\geq$27 mas/yr allowing to confirm/reject physical companion candidates taking two epoch separated by 1-2 yr.
- The apparent V=5-6 mag, so the targets are suitable self-references for NACO even under poor weather conditions.
- The stars have DEC$\leq$0 deg, i.e. visible from the VLT.

The final sample contains 341 field B- and A-type stars. The average distance is 114 pc, the median distance is 104 pc.

4. Observations and Current Status

The observations were carried out with NAOS–CONICA (Nasmyth Adaptive Optics System – Near-Infrared Imager and Spectrograph) at

the ESO VLT over the last two years. The pixel scale was 27.03 mas px^{-1}, giving 27.7×27.7 arcsec field of view. Each target was observed at 9 different position on the detector, collecting total of ∼7.5 min of integration. The data reduction includes sky subtraction, flat-fielding, aligning and combination of the images into a single frame. Next, we perform PSF fitting/subtraction and search for faint companions.

As of Sept 2005 we have observed 196 objects from our sample. We have analyzed 152 of them: 81 appear single, and 71 show companion candidates whose nature will be tested with the second epoch observations with ≥2 yr baseline.

5. Analysis: Modeling the Survey

To estimate the sensitivity and the completeness of the survey we have created a Monte-Carlo simulation that takes into account all available information for the survey stars (Fig. 1). The model input parameters are:

- the known distances, spectral types, absolute luminosities for all primaries;
- adopted binarity fraction;
- secondary star mass randomly sampled from the Kroupa et al. (1993) IMF;
- secondary star's spectral type and absolute magnitude calculated from the mass;
- orbital periods - randomly generated from Duquennoy & Mayor (1991) distribution;
- major axis calculated from the Kepler's low and the period;
- random ellipticity, random orbital inclination;
- visibility criterion based on the magnitude difference and the angular separation between the primary and the companion.

The model predicts: the distributions of periods, angular separations, magnitude differences and spectral types for the detected binaries. The simulations indicate that we will detect about 2/3 of the physical companions.

Acknowledgements

We are grateful to our colleagues from the ESO-Paranal Science Operations Department who carried out these observation in Service Mode.

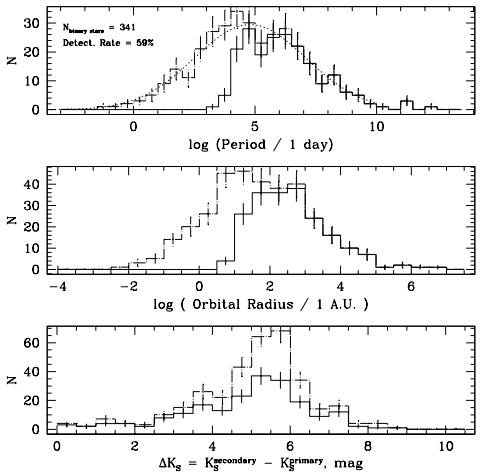

Figure 1. Monte-Carlo simulation of the survey completeness: orbital period distribution (top panel), orbital radii distribution (middle), and primary-secondary K-band magnitude difference (bottom). The dot-dashed lines show the "true" adopted/generated distributions and the solid lines are the "observed" distributions after the observational detectability conditions have been applied. The theoretical period distribution of Duquennoy & Mayor (1991) is also shown (doted line on the top panel).

References

Brandner, W., Alcala, J.M., Moneti, A., & Zinnecker, H. 1996, A&A, 307, 121
de Zeeuw, P.T., Hoogerwerf, R., de Bruijne, J.H.J., Brown, A.G.A., & Blaauw, A. 1999, AJ, 117, 354
Duquennoy, A. & Mayor, M. 1991, A&A, 248, 485
Kroupa, P., Tout, C.A. & Gilmore, G. 1993, MNRAS, 262, 545
Petr, M.G., Coude Du Foresto, V., Beckwith, S.V.W., Richichi, A., McCaughren, M.J. 1998, ApJ, 500, 825
Preibisch, T., Balega, Y., Hofmann, K.-H., Weiglet, G., & Zinnecker, H. 1999, New Astr., 4, 531
Prosser, C.F., Stauffer, J.R., Hartmann, L., Soderblom, D.R., Jones, B.F., Werner, M.W., & McCaughren, M.J. 1994, ApJ, 421, 517
Reipurth, B. & Zinnecker, H. 1993, A&A, 278, 81
Shatsky, N. & Tokovinin, A. 2002, A&A, 382, 92
Sterzik, M.F. & Durisen, R.H. 1995, A&A, 304, 9
Tokovinin, A., Chalabaev, A., Shatsky, N., & Beuzit, J.L. 1999, A&A, 346, 481

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1998/02/11

Abstract. This internal file takes care of list definitions and 'general' point size options.

Table of Contents

1. Implementation

```
\ProvidesFile{klu9.clo}[\filedate ]
```

1.1. Section size commands

added command: `\little`. This is identical to `\tiny` here. Allowed type provided values: 5/6, 6/7, 7/8, 8/9.5, 9/11, 10/12, 11/13, 12/14, 14/18, 17/22, 20/25.

```
\renewcommand\normalsize{%
   \@setfontsize\normalsize\@ixpt{11}%
   \abovedisplayskip 8.5\p@ \@plus3\p@ \@minus4\p@
   \abovedisplayshortskip \z@ \@plus2\p@
   \belowdisplayshortskip 4\p@ \@plus2\p@ \@minus2\p@
   \belowdisplayskip \abovedisplayskip
   \let\listi\@listI}
\normalsize
\newcommand\small{%
   \@setfontsize\small\@viiipt{9.5}%
   \abovedisplayskip 6\p@ \@plus2\p@ \@minus4\p@
   \abovedisplayshortskip \z@ \@plus\p@
   \belowdisplayshortskip 3\p@ \@plus\p@ \@minus2\p@
   \def\@listi{\leftmargin\leftmargini
               \topsep 3\p@ \@plus\p@ \@minus\p@
               \parsep 2\p@ \@plus\p@ \@minus\p@
               \itemsep \parsep}%
   \belowdisplayskip \abovedisplayskip
}
\newcommand\footnotesize{%
   \@setfontsize\footnotesize\@viipt{8}%
   \abovedisplayskip 4\p@ \@plus2\p@ \@minus2\p@
   \abovedisplayshortskip \z@ \@plus\p@
   \belowdisplayshortskip 2\p@ \@plus\p@ \@minus1\p@
   \def\@listi{\leftmargin\leftmargini
               \topsep 2\p@ \@plus\p@ \@minus\p@
               \parsep 1\p@ \@plus\p@ \@minus\p@
               \itemsep \parsep}%
   \belowdisplayskip \abovedisplayskip
}
\newcommand\scriptsize{\@setfontsize\scriptsize\@vipt\@viipt}
\newcommand\little{\@setfontsize\little\@vpt\@vipt}
\newcommand\tiny{\@setfontsize\tiny\@vpt\@vipt}
\newcommand\large{\@setfontsize\large\@xpt\@xiipt}
\newcommand\Large{\@setfontsize\Large\@xiipt{14}}
\newcommand\LARGE{\@setfontsize\LARGE\@xivpt{18}}
\newcommand\huge{\@setfontsize\huge\@xviipt{22}}
\newcommand\Huge{\@setfontsize\Huge\@xxpt{25}}
```

1.2. Various values

Note that `\hoffset` and `\voffset` are both compensated. This makes the calculations below easier.

```
\setlength\hoffset{-1in}
\setlength\voffset{-1in}
\setlength\parindent {14\p@}
\setlength\headheight{12\p@}
```

```
\setlength\headsep   {12\p@}
\setlength\topskip   {10\p@}
\setlength\footskip  {25\p@}
\setlength\marginparsep{10pt}
\setlength\marginparpush{5\p@}
\setlength\maxdepth  {.5\topskip}
\setlength\@maxdepth\maxdepth
\setlength\columnsep{10pt}
\setlength\columnseprule{0pt}
\setlength\fboxsep{3pt}
\setlength\fboxrule{.4pt}
```

1.3. Textheight and textwidth

These are the main reason for the existence of these files. For some stupid reason, LaTeX calculates textwidth out of `\paperwidth`. We did want to support letter paper, but our `\textwidth` is fixed, with the margins being calculated.

Presume `\textwidth` and `\marginparwidth` are set in the stylefile, or we're in trouble. The `2pc` value is used to compensate for the 'dead' corners in most laserprinters.

Calculations are done 'AtBeginDocument' to allow changes made in the preamble and later on in the stylefile.

```
\newdimen\id@boxheight
\AtBeginDocument{%
  \setlength\@tempdima{\paperwidth}%
  \addtolength\@tempdima{-\textwidth}%
  \divide\@tempdima by 2
  \setlength\@tempdimb\marginparwidth
  \addtolength\@tempdimb\marginparsep
  \addtolength\@tempdimb{2pc}%
  \ifdim \@tempdima <\@tempdimb
     \@settopoint\@tempdimb
     \GenericError{Pointsize}{Pointsize Error: Marginpars disabled}{}{You made
      your \string\textwidth\space (\the\textwidth) and
      \string\marginparwidth (\the\marginparwidth) too wide.\MessageBreak
      The allowed value for margin space: (\the\@tempdima). Needed value:
      (\the\@tempdimb).\MessageBreak
      This is not enough,
      so I will set \string\marginparwidth\space  to 0pt.\MessageBreak
      Let's hope that fixes it.
     }%
     \marginparwidth \z@
     \marginparsep \z@
  \fi
  \ifdim \@tempdima <2pc
     \@tempdimb=\paperwidth
     \advance\@tempdimb by -4pc
     \@settopoint\@tempdimb
     \GenericError{Pointsize}{Pointsize Error: Invalid sizes given}{}{You
     made your \string\textwidth\space (\the\textwidth)
     wider than the available total\MessageBreak
     (Which is: \the\@tempdimb). Please press X and try again.
     }%
  \fi
  \oddsidemargin \@tempdima
  \evensidemargin \@tempdima
```

These calculations are a lot easier. `\textheight` should have been set already. This does not check for the correct placement of the identification line!!

```
  \setlength\@tempdima{\paperheight}
  \addtolength\@tempdima{-\footskip}
  \addtolength\@tempdima{-\headheight}
  \addtolength\@tempdima{-\headsep}
  \setlength\@tempdimb{\@tempdima}
  \addtolength\@tempdima{-\textheight}
  \divide\@tempdima by 2
  \ifdim \@tempdima <2pc
  \advance\@tempdimb by -4pc
  \@settopoint\@tempdimb
     \GenericError{Pointsize}{Pointsize Error: Invalid sizes given}{}{You
     made your \string\textheight\space (\the\textheight)
     more than the available total.\MessageBreak
     (Which is: \the\@tempdimb). Please press X and try again.
     }%
  \fi
  \setlength\topmargin{\@tempdima}
  \setlength\id@boxheight{\@tempdima}
  \advance\id@boxheight by -2pc
}

\setlength\footnotesep{6\p@}
\setlength{\skip\footins}{9\p@ \@plus 4\p@ \@minus 2\p@}
```

1.4. Lists

List default values

```
\setlength\partopsep{2\p@ \@plus 1\p@ \@minus 1\p@}
\setlength{\leftmargini}{1.9em}
\setlength{\leftmarginii}{2em}
\setlength{\leftmariniii}{1.7em}
\setlength{\leftmarginiv}{1.4em}
\setlength{\leftmarginv}{1em}
\setlength{\leftmarginvi}{1em}
\setlength{\labelsep}{.4em}
\setlength{\labelwidth}{\leftmargini}
\addtolength{\labelwidth}{-\labelsep}
```

Note that lists below level 3 do nothing else then readjusting the `\labelwidth`. This results in very small labels for the inner lists.

```
\def\@listI{%
  \leftmargin \leftmargini
  \topsep 8\p@ \@plus2\p@ \@minus2\p@
  \partopsep 2\p@ \@plus 1\p@ \@minus 1\p@
  \itemsep 4\p@ \@plus 2\p@ \@minus 1\p@
  \parsep 4\p@ \@plus 2\p@ \@minus 1\p@ }
\def\@listii{%
  \leftmargin \leftmarginii
  \labelwidth \leftmarginii
  \advance\labelwidth by -\labelsep
  \topsep 4.5\p@ \@plus 2\p@ \@minus 1\p@
  \parsep 2\p@ \@plus 1\p@ \@minus 1\p@
  \itemsep \parsep}
```

```
\def\@listiii{%
  \leftmargin \leftmarginiii
  \labelwidth \leftmarginiii
  \advance\labelwidth by -\labelsep
  \topsep 2\p@ \@plus 1\p@ \@minus 1\p@
  \parsep \z@
  \partopsep 1\p@ \@plus 0\p@ \@minus 1\p@
  \itemsep \topsep}
\def\@listiv{%
  \setlength{\leftmargin}{\leftmarginiv}%
  \setlength{\labelwidth}{\leftmarginiv}%
  \addtolength{\labelwidth}{-\labelsep}}
\def\@listv{%
  \setlength{\leftmargin}{\leftmarginv}%
  \setlength{\labelwidth}{\leftmarginv}%
  \addtolength{\labelwidth}{-\labelsep}}
\def\@listvi{%
  \setlength{\leftmargin}{\leftmarginvi}%
  \setlength{\labelwidth}{\leftmarginvi}%
  \addtolength{\labelwidth}{-\labelsep}}
\let\@listi\@listI
\@listi
```

1.5. Float separation parameters

Separation on text pages.

```
\setlength\floatsep{10\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\textfloatsep{18\p@ \@plus 2\p@ \@minus 4\p@}
\setlength\intextsep{10\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\dblfloatsep{10\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\dbltextfloatsep{18\p@ \@plus 2\p@ \@minus 4\p@}
```

Separation on float pages

```
\setlength\@fptop{0\p@ \@plus 1fil}
\setlength\@fpsep{8\p@ \@plus 2fil}
\setlength\@fpbot{0\p@ \@plus 1fil}
\setlength\@dblfptop{0\p@ \@plus 1fil}
\setlength\@dblfpsep{8\p@ \@plus 2fil}
\setlength\@dblfpbot{0\p@ \@plus 1fil}

\endinput
```

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   \belowdisplayshortskip 4\p@ \@plus2\p@ \@minus2\p@
   \belowdisplayskip \abovedisplayskip
   \let\listi\@listI}
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  \divide\@tempdima by 2
  \setlength\@tempdimb\marginparwidth
  \addtolength\@tempdimb\marginparsep
  \addtolength\@tempdimb{2pc}%
  \ifdim \@tempdima <\@tempdimb
     \@settopoint\@tempdimb
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      so I will set \string\marginparwidth\space  to 0pt.\MessageBreak
      Let's hope that fixes it.
     }%
     \marginparwidth \z@
     \marginparsep \z@
  \fi
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     \@tempdimb=\paperwidth
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     wider than the available total\MessageBreak
     (Which is: \the\@tempdimb). Please press X and try again.
     }%
  \fi
  \oddsidemargin \@tempdima
  \evensidemargin \@tempdima
```

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```
  \setlength\@tempdima{\paperheight}
  \addtolength\@tempdima{-\footskip}
  \addtolength\@tempdima{-\headheight}
  \addtolength\@tempdima{-\headsep}
  \setlength\@tempdimb{\@tempdima}
  \addtolength\@tempdima{-\textheight}
  \divide\@tempdima by 2
  \ifdim \@tempdima <2pc
  \advance\@tempdimb by -4pc
  \@settopoint\@tempdimb
     \GenericError{Pointsize}{Pointsize Error: Invalid sizes given}{}{You
     made your \string\textheight\space (\the\textheight)
     more than the available total.\MessageBreak
     (Which is: \the\@tempdimb). Please press X and try again.
     }%
  \fi
  \setlength\topmargin{\@tempdima}
  \setlength\id@boxheight{\@tempdima}
  \advance\id@boxheight by -2pc
}

\setlength\footnotesep{6\p@}
\setlength{\skip\footins}{9\p@ \@plus 4\p@ \@minus 2\p@}
```

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\setlength{\leftmarginiv}{1.4em}
\setlength{\leftmarginv}{1em}
\setlength{\leftmarginvi}{1em}
\setlength{\labelsep}{.4em}
\setlength{\labelwidth}{\leftmargini}
\addtolength{\labelwidth}{-\labelsep}
```

Note that lists below level 3 do nothing else then readjusting the `\labelwidth`. This results in very small labels for the inner lists.

```
\def\@listI{%
  \leftmargin \leftmargini
  \topsep 8\p@ \@plus2\p@ \@minus2\p@
  \partopsep 2\p@ \@plus 1\p@ \@minus 1\p@
  \itemsep 4\p@ \@plus 2\p@ \@minus 1\p@
  \parsep 4\p@ \@plus 2\p@ \@minus 1\p@ }
\def\@listii{%
  \leftmargin \leftmarginii
  \labelwidth \leftmarginii
  \advance\labelwidth by -\labelsep
  \topsep 4.5\p@ \@plus 2\p@ \@minus 1\p@
  \parsep 2\p@ \@plus 1\p@ \@minus 1\p@
  \itemsep \parsep}
```

```
\def\@listiii{%
  \leftmargin \leftmarginiii
  \labelwidth \leftmarginiii
  \advance\labelwidth by -\labelsep
  \topsep 2\p@ \@plus 1\p@ \@minus 1\p@
  \parsep \z@
  \partopsep 1\p@ \@plus 0\p@ \@minus 1\p@
  \itemsep \topsep}
\def\@listiv{%
  \setlength{\leftmargin}{\leftmarginiv}%
  \setlength{\labelwidth}{\leftmarginiv}%
  \addtolength{\labelwidth}{-\labelsep}}
\def\@listv{%
  \setlength{\leftmargin}{\leftmarginv}%
  \setlength{\labelwidth}{\leftmarginv}%
  \addtolength{\labelwidth}{-\labelsep}}
\def\@listvi{%
  \setlength{\leftmargin}{\leftmarginvi}%
  \setlength{\labelwidth}{\leftmarginvi}%
  \addtolength{\labelwidth}{-\labelsep}}
\let\@listi\@listI
\@listi
```

1.5. Float separation parameters

Separation on text pages.

```
\setlength\floatsep{10\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\textfloatsep{18\p@ \@plus 2\p@ \@minus 4\p@}
\setlength\intextsep{10\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\dblfloatsep{10\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\dbltextfloatsep{18\p@ \@plus 2\p@ \@minus 4\p@}
```

Separation on float pages

```
\setlength\@fptop{0\p@ \@plus 1fil}
\setlength\@fpsep{8\p@ \@plus 2fil}
\setlength\@fpbot{0\p@ \@plus 1fil}
\setlength\@dblfptop{0\p@ \@plus 1fil}
\setlength\@dblfpsep{8\p@ \@plus 2fil}
\setlength\@dblfpbot{0\p@ \@plus 1fil}

\endinput
```

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1998/02/11

Abstract. This internal file takes care of list definitions and 'general' point size options.

Table of Contents

1. Implementation

```
\ProvidesFile{klu10.clo}[\filedate ]
```

1.1. Section size commands

added command: `\little`. This between `\scriptsize` and `\tiny`. Allowed type provided values: 5/6, 6/7, 7/8, 8/9.5, 9/11, 10/12, 12/14, 14/18, 17/22, 20/25, 25/30.

```
\renewcommand\normalsize{%
   \@setfontsize\normalsize\@xpt\@xiipt
   \abovedisplayskip 10\p@ \@plus 2\p@ \@minus5\p@
   \abovedisplayshortskip \z@ \@plus 3\p@
   \belowdisplayshortskip 6\p@ \@plus 3\p@ \@minus3\p@
   \belowdisplayskip \abovedisplayskip
   \let\@listi\@listI}
\normalsize
\newcommand\small{%
   \@setfontsize\small\@ixpt{11}%
   \abovedisplayskip 8.5\p@ \@plus3\p@ \@minus4\p@
   \abovedisplayshortskip \z@ \@plus2\p@
   \belowdisplayshortskip 4\p@ \@plus2\p@ \@minus2\p@
   \def\@listi{\leftmargin\leftmargini
               \topsep 4\p@ \@plus2\p@ \@minus2\p@
               \parsep 2\p@ \@plus\p@ \@minus\p@
               \itemsep \parsep}%
   \belowdisplayskip \abovedisplayskip
}
\newcommand\footnotesize{%
   \@setfontsize\footnotesize\@viiipt{9.5}%
   \abovedisplayskip 6\p@ \@plus2\p@ \@minus4\p@
   \abovedisplayshortskip \z@ \@plus\p@
   \belowdisplayshortskip 3\p@ \@plus\p@ \@minus2\p@
   \def\@listi{\leftmargin\leftmargini
               \topsep 3\p@ \@plus\p@ \@minus\p@
               \parsep 2\p@ \@plus\p@ \@minus\p@
               \itemsep \parsep}%
   \belowdisplayskip \abovedisplayskip
}
\newcommand\scriptsize{\@setfontsize\scriptsize\@viipt\@viiipt}
\newcommand\little{\@setfontsize\little\@vipt\@viipt}
\newcommand\tiny{\@setfontsize\tiny\@vpt\@vipt}
\newcommand\large{\@setfontsize\large\@xiipt{14}}
\newcommand\Large{\@setfontsize\Large\@xivpt{18}}
\newcommand\LARGE{\@setfontsize\LARGE\@xviipt{22}}
\newcommand\huge{\@setfontsize\huge\@xxpt{25}}
\newcommand\Huge{\@setfontsize\Huge\@xxvpt{30}}
```

1.2. Various values

Note that \hoffset and \voffset are both compensated. This makes the calculations below easier.

```
\setlength\hoffset{-1.5cm}
\setlength\voffset{0pt}
\setlength\parindent {14\p@}
\setlength\headheight{12\p@}
\setlength\headsep   {12\p@}
\setlength\topskip   {10\p@}
\setlength\footskip  {27.5\p@}
\setlength\marginparsep{10pt}
\setlength\marginparpush{5\p@}
\setlength\maxdepth  {.5\topskip}
\setlength\@maxdepth\maxdepth
\setlength\columnsep{10pt}
\setlength\columnseprule{0pt}
\setlength\fboxsep{3pt}
\setlength\fboxrule{.4pt}
```

1.3. Textheight and textwidth

These are the main reason for the existence of these files. For some stupid reason, LaTeX calculates textwidth out of \paperwidth. We did want to support letter paper, but our \textwidth is fixed, with the margins being calculated.

Presume \textwidth and \marginparwidth are set in the stylefile, or we're in trouble. The 2pc value is used to compensate for the 'dead' corners in most laserprinters.

Calculations are done 'AtBeginDocument' to allow changes made in the preamble and later on in the stylefile.

```
\newdimen\id@boxheight
\AtBeginDocument{%
  \setlength\@tempdima{\paperwidth}%
  \addtolength\@tempdima{-\textwidth}%
  \divide\@tempdima by 2
  \setlength\@tempdimb\marginparwidth
  \addtolength\@tempdimb\marginparsep
  \addtolength\@tempdimb{2pc}%
  \ifdim \@tempdima <\@tempdimb
     \@settopoint\@tempdimb
     \GenericError{Pointsize}{Pointsize Error: Marginpars disabled}{}{You made
      your \string\textwidth\space (\the\textwidth) and
      \string\marginparwidth (\the\marginparwidth) too wide.\MessageBreak
      The allowed value for margin space: (\the\@tempdima). Needed value:
      (\the\@tempdimb).\MessageBreak
      This is not enough,
      so I will set \string\marginparwidth\space  to 0pt.\MessageBreak
      Let's hope that fixes it.
```

```
    }%
    \marginparwidth \z@
    \marginparsep \z@
  \fi
  \ifdim \@tempdima <2pc
     \@tempdimb=\paperwidth
    \advance\@tempdimb by -4pc
     \@settopoint\@tempdimb
     \GenericError{Pointsize}{Pointsize Error: Invalid sizes given}{}{You
     made your \string\textwidth\space (\the\textwidth)
     wider than the available total\MessageBreak
     (Which is: \the\@tempdimb). Please press X and try again.
     }%
  \fi
  \oddsidemargin 1in
  \evensidemargin 1in
```

These calculations are a lot easier. `\textheight` should have been set already. This does not check for the correct placement of the identification line!!

```
  \setlength\@tempdima{\paperheight}
  \addtolength\@tempdima{-\footskip}
  \addtolength\@tempdima{-\headheight}
  \addtolength\@tempdima{-\headsep}
  \setlength\@tempdimb{\@tempdima}
  \addtolength\@tempdima{-\textheight}
  \divide\@tempdima by 2
  \ifdim \@tempdima <2pc
  \advance\@tempdimb by -4pc
  \@settopoint\@tempdimb
     \GenericError{Pointsize}{Pointsize Error: Invalid sizes given}{}{You
     made your \string\textheight\space (\the\textheight)
     more than the available total.\MessageBreak
     (Which is: \the\@tempdimb). Please press X and try again.
     }%
  \fi
  \setlength\topmargin{0pt}
  \setlength\id@boxheight{\@tempdima}
  \advance\id@boxheight by -2pc
}

\setlength\footnotesep{6.65\p@}
\setlength{\skip\footins}{9\p@ \@plus 4\p@ \@minus 2\p@}
```

1.4. Lists

List default values

```
\setlength\partopsep{2\p@ \@plus 1\p@ \@minus 1\p@}
\setlength{\leftmargini}{2em}
\setlength{\leftmarginii}{2.2em}
```

```
\setlength{\leftmarginiii}{1.87em}
\setlength{\leftmarginiv}{1.7em}
\setlength{\leftmarginv}{1em}
\setlength{\leftmarginvi}{1em}
\setlength{\labelsep}{.4em}
\setlength{\labelwidth}{\leftmargini}
\addtolength{\labelwidth}{-\labelsep}
```

Note that lists below level 3 do nothing else then readjusting the `\labelwidth`. This results in very small labels for the inner lists.

```
\def\@listI{%
  \leftmargin \leftmargini
  \topsep  9\p@ \@plus 3\p@ \@minus 5\p@
  \partopsep 3\p@ \@plus 1\p@ \@minus 2\p@
  \itemsep 4.5\p@ \@plus 2\p@ \@minus 1\p@
  \parsep 4.5\p@ \@plus 2\p@ \@minus 1\p@ }
\def\@listii{%
  \leftmargin \leftmarginii
  \labelwidth \leftmarginii
  \advance\labelwidth by -\labelsep
  \topsep 4.5\p@ \@plus 2\p@ \@minus 1\p@
  \parsep 2\p@ \@plus 1\p@ \@minus 1\p@
  \itemsep \parsep}
\def\@listiii{%
  \leftmargin \leftmarginiii
  \labelwidth \leftmarginiii
  \advance\labelwidth by -\labelsep
  \topsep 2\p@ \@plus 1\p@ \@minus 1\p@
  \parsep \z@
  \partopsep 1\p@ \@plus 0\p@ \@minus 1\p@
  \itemsep \topsep}
\def\@listiv{%
  \setlength{\leftmargin}{\leftmarginiv}%
  \setlength{\labelwidth}{\leftmarginiv}%
  \addtolength{\labelwidth}{-\labelsep}}
\def\@listv{%
  \setlength{\leftmargin}{\leftmarginv}%
  \setlength{\labelwidth}{\leftmarginv}%
  \addtolength{\labelwidth}{-\labelsep}}
\def\@listvi{%
  \setlength{\leftmargin}{\leftmarginvi}%
  \setlength{\labelwidth}{\leftmarginvi}%
  \addtolength{\labelwidth}{-\labelsep}}
\let\@listi\@listI
\@listi
```

1.5. Float separation parameters

Separation on text pages.

```
\setlength\floatsep{12\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\textfloatsep{20\p@ \@plus 2\p@ \@minus 4\p@}
\setlength\intextsep{12\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\dblfloatsep{12\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\dbltextfloatsep{20\p@ \@plus 2\p@ \@minus 4\p@}
```

Separation on float pages

```
\setlength\@fptop{0\p@ \@plus 1fil}
\setlength\@fpsep{8\p@ \@plus 2fil}
\setlength\@fpbot{0\p@ \@plus 1fil}
\setlength\@dblfptop{0\p@ \@plus 1fil}
\setlength\@dblfpsep{8\p@ \@plus 2fil}
\setlength\@dblfpbot{0\p@ \@plus 1fil}

\endinput
```

klut10.clo

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Abstract. This internal file takes care of list definitions and 'general' point size options. This is a the 'tight' file.

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1. Implementation

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1.1. Section size commands

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```
\renewcommand\normalsize{%
   \@setfontsize\normalsize\@xpt{11.5}%
   \abovedisplayskip 10\p@ \@plus 2\p@ \@minus5\p@
   \abovedisplayshortskip \z@ \@plus 3\p@
   \belowdisplayshortskip 6\p@ \@plus 3\p@ \@minus3\p@
   \belowdisplayskip \abovedisplayskip
   \let\@listi\@listI}
\normalsize
\newcommand\small{%
   \@setfontsize\small\@ixpt{10.5}%
   \abovedisplayskip 8.5\p@ \@plus3\p@ \@minus4\p@
   \abovedisplayshortskip \z@ \@plus2\p@
   \belowdisplayshortskip 4\p@ \@plus2\p@ \@minus2\p@
   \def\@listi{\leftmargin\leftmargini
               \topsep 4\p@ \@plus2\p@ \@minus2\p@
               \parsep 2\p@ \@plus\p@ \@minus\p@
               \itemsep \parsep}%
   \belowdisplayskip \abovedisplayskip
}
\newcommand\footnotesize{%
   \@setfontsize\footnotesize\@viiipt{9}%
   \abovedisplayskip 6\p@ \@plus2\p@ \@minus4\p@
   \abovedisplayshortskip \z@ \@plus\p@
   \belowdisplayshortskip 3\p@ \@plus\p@ \@minus2\p@
   \def\@listi{\leftmargin\leftmargini
               \topsep 3\p@ \@plus\p@ \@minus\p@
               \parsep 2\p@ \@plus\p@ \@minus\p@
               \itemsep \parsep}%
   \belowdisplayskip \abovedisplayskip
}
\newcommand\scriptsize{\@setfontsize\scriptsize\@viipt\@viiipt}
\newcommand\little{\@setfontsize\little\@vipt\@viipt}
\newcommand\tiny{\@setfontsize\tiny\@vpt\@vipt}
\newcommand\large{\@setfontsize\large\@xiipt{14}}
\newcommand\Large{\@setfontsize\Large\@xivpt{18}}
\newcommand\LARGE{\@setfontsize\LARGE\@xviipt{22}}
\newcommand\huge{\@setfontsize\huge\@xxpt{25}}
\newcommand\Huge{\@setfontsize\Huge\@xxvpt{30}}
```

1.2. Various values

Note that `\hoffset` and `\voffset` are both compensated. This makes the calculations below easier.

```
\setlength\hoffset{-1in}
\setlength\voffset{-1in}
\setlength\parindent {14\p@}
\setlength\headheight{12\p@}
\setlength\headsep   {12\p@}
\setlength\topskip   {10\p@}
\setlength\footskip  {27.5\p@}
\setlength\marginparsep{10pt}
\setlength\marginparpush{5\p@}
\setlength\maxdepth  {.5\topskip}
\setlength\@maxdepth\maxdepth
\setlength\columnsep{10pt}
\setlength\columnseprule{0pt}
\setlength\fboxsep{3pt}
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Calculations are done 'AtBeginDocument' to allow changes made in the preamble and later on in the stylefile.

```
\newdimen\id@boxheight
\AtBeginDocument{%
  \setlength\@tempdima{\paperwidth}%
  \addtolength\@tempdima{-\textwidth}%
  \divide\@tempdima by 2
  \setlength\@tempdimb\marginparwidth
  \addtolength\@tempdimb\marginparsep
  \addtolength\@tempdimb{2pc}%
  \ifdim \@tempdima <\@tempdimb
     \@settopoint\@tempdimb
     \GenericError{Pointsize}{Pointsize Error: Marginpars disabled}{}{You made
      your \string\textwidth\space (\the\textwidth) and
      \string\marginparwidth (\the\marginparwidth) too wide.\MessageBreak
      The allowed value for margin space: (\the\@tempdima). Needed value:
      (\the\@tempdimb).\MessageBreak
      This is not enough,
      so I will set \string\marginparwidth\space  to 0pt.\MessageBreak
      Let's hope that fixes it.
```

```
    }%
    \marginparwidth \z@
    \marginparsep \z@
  \fi
  \ifdim \@tempdima <2pc
    \@tempdimb=\paperwidth
    \advance\@tempdimb by -4pc
    \@settopoint\@tempdimb
    \GenericError{Pointsize}{Pointsize Error: Invalid sizes given}{}{You
    made your \string\textwidth\space (\the\textwidth)
    wider than the available total\MessageBreak
    (Which is: \the\@tempdimb). Please press X and try again.
    }%
  \fi
  \oddsidemargin \@tempdima
  \evensidemargin \@tempdima
```

These calculations are a lot easier. `\textheight` should have been set already. This does not check for the correct placement of the identification line!!

```
  \setlength\@tempdima{\paperheight}
  \addtolength\@tempdima{-\footskip}
  \addtolength\@tempdima{-\headheight}
  \addtolength\@tempdima{-\headsep}
  \setlength\@tempdimb{\@tempdima}
  \addtolength\@tempdima{-\textheight}
  \divide\@tempdima by 2
  \ifdim \@tempdima <2pc
  \advance\@tempdimb by -4pc
  \@settopoint\@tempdimb
    \GenericError{Pointsize}{Pointsize Error: Invalid sizes given}{}{You
    made your \string\textheight\space (\the\textheight)
    more than the available total.\MessageBreak
    (Which is: \the\@tempdimb). Please press X and try again.
    }%
  \fi
  \setlength\topmargin{\@tempdima}
  \setlength\id@boxheight{\@tempdima}
  \advance\id@boxheight by -2pc
}

\setlength\footnotesep{6.65\p@}
\setlength{\skip\footins}{9\p@ \@plus 4\p@ \@minus 2\p@}
```

1.4. Lists

List default values

```
\setlength\partopsep{2\p@ \@plus 1\p@ \@minus 1\p@}
\setlength{\leftmargini}{2em}
\setlength{\leftmarginii}{2.2em}
```

```
\setlength{\leftmarginiii}{1.87em}
\setlength{\leftmarginiv}{1.7em}
\setlength{\leftmarginv}{1em}
\setlength{\leftmarginvi}{1em}
\setlength{\labelsep}{.4em}
\setlength{\labelwidth}{\leftmargini}
\addtolength{\labelwidth}{-\labelsep}
```

Note that lists below level 3 do nothing else then readjusting the `\labelwidth`. This results in very small labels for the inner lists.

```
\def\@listI{%
  \leftmargin \leftmargini
  \topsep  9\p@ \@plus 3\p@ \@minus 5\p@
  \partopsep 3\p@ \@plus 1\p@ \@minus 2\p@
  \itemsep 4.5\p@ \@plus 2\p@ \@minus 1\p@
  \parsep 4.5\p@ \@plus 2\p@ \@minus 1\p@ }
\def\@listii{%
  \leftmargin \leftmarginii
  \labelwidth \leftmarginii
  \advance\labelwidth by -\labelsep
  \topsep 4.5\p@ \@plus 2\p@ \@minus 1\p@
  \parsep 2\p@ \@plus 1\p@ \@minus 1\p@
  \itemsep \parsep}
\def\@listiii{%
  \leftmargin \leftmarginiii
  \labelwidth \leftmarginiii
  \advance\labelwidth by -\labelsep
  \topsep 2\p@ \@plus 1\p@ \@minus 1\p@
  \parsep \z@
  \partopsep 1\p@ \@plus 0\p@ \@minus 1\p@
  \itemsep \topsep}
\def\@listiv{%
  \setlength{\leftmargin}{\leftmarginiv}%
  \setlength{\labelwidth}{\leftmarginiv}%
  \addtolength{\labelwidth}{-\labelsep}}
\def\@listv{%
  \setlength{\leftmargin}{\leftmarginv}%
  \setlength{\labelwidth}{\leftmarginv}%
  \addtolength{\labelwidth}{-\labelsep}}
\def\@listvi{%
  \setlength{\leftmargin}{\leftmarginvi}%
  \setlength{\labelwidth}{\leftmarginvi}%
  \addtolength{\labelwidth}{-\labelsep}}
\let\@listi\@listI
\@listi
```

1.5. Float separation parameters

Separation on text pages.

```
\setlength\floatsep{12\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\textfloatsep{20\p@ \@plus 2\p@ \@minus 4\p@}
\setlength\intextsep{12\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\dblfloatsep{12\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\dbltextfloatsep{20\p@ \@plus 2\p@ \@minus 4\p@}
```

Separation on float pages

```
\setlength\@fptop{0\p@ \@plus 1fil}
\setlength\@fpsep{8\p@ \@plus 2fil}
\setlength\@fpbot{0\p@ \@plus 1fil}
\setlength\@dblfptop{0\p@ \@plus 1fil}
\setlength\@dblfpsep{8\p@ \@plus 2fil}
\setlength\@dblfpbot{0\p@ \@plus 1fil}

\endinput
```

klut11.clo

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Abstract. This internal file takes care of list definitions and 'general' point size options. This is a the 'tight' file.

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1. Implementation

```
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1.1. Section size commands

added command: `\little`. This between `\scriptsize` and `\tiny`. Allowed type provided values: 6/7, 7/8, 8/9, 9/10.5, 10/11.5, 11/12.5, 12/14, 14/18, 17/22, 20/25, 25/30.

```
\renewcommand\normalsize{%
   \@setfontsize\normalsize\@xipt{12.5}%
   \abovedisplayskip 10\p@ \@plus 2\p@ \@minus5\p@
   \abovedisplayshortskip \z@ \@plus 3\p@
   \belowdisplayshortskip 6\p@ \@plus 3\p@ \@minus3\p@
   \belowdisplayskip \abovedisplayskip
   \let\@listi\@listI}
\normalsize
\newcommand\small{%
   \@setfontsize\small\@xpt{11.5}%
   \abovedisplayskip 9\p@ \@plus3\p@ \@minus4\p@
   \abovedisplayshortskip \z@ \@plus2\p@
   \belowdisplayshortskip 5\p@ \@plus2\p@ \@minus2\p@
   \def\@listi{\leftmargin\leftmargini
               \topsep 4\p@ \@plus2\p@ \@minus2\p@
               \parsep 2\p@ \@plus\p@ \@minus\p@
               \itemsep \parsep}%
   \belowdisplayskip \abovedisplayskip
}
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   \belowdisplayshortskip 3\p@ \@plus\p@ \@minus2\p@
   \def\@listi{\leftmargin\leftmargini
               \topsep 3\p@ \@plus\p@ \@minus\p@
               \parsep 2\p@ \@plus\p@ \@minus\p@
               \itemsep \parsep}%
   \belowdisplayskip \abovedisplayskip
}
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\newcommand\little{\@setfontsize\little\@viipt\@viiipt}
\newcommand\tiny{\@setfontsize\tiny\@vipt\@viipt}
\newcommand\large{\@setfontsize\large\@xiipt{14}}
\newcommand\Large{\@setfontsize\Large\@xivpt{18}}
\newcommand\LARGE{\@setfontsize\LARGE\@xviipt{22}}
\newcommand\huge{\@setfontsize\huge\@xxpt{25}}
```

```
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```

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```
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\setlength\voffset{-1in}
\setlength\parindent {14\p@}
\setlength\headheight{12\p@}
\setlength\headsep   {12\p@}
\setlength\topskip   {10\p@}
\setlength\footskip  {27.5\p@}
\setlength\marginparsep{10pt}
\setlength\marginparpush{5\p@}
\setlength\maxdepth  {.5\topskip}
\setlength\@maxdepth\maxdepth
\setlength\columnsep{10pt}
\setlength\columnseprule{0pt}
\setlength\fboxsep{3pt}
\setlength\fboxrule{.4pt}
```

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These are the main reason for the existence of these files. For some stupid reason, LaTeX calculates textwidth out of `\paperwidth`. We did want to support letter paper, but our `\textwidth` is fixed, with the margins being calculated.

Presume `\textwidth` and `\marginparwidth` are set in the stylefile, or we're in trouble. The `2pc` value is used to compensate for the 'dead' corners in most laserprinters.

Calculations are done 'AtBeginDocument' to allow changes made in the preamble and later on in the stylefile.

```
\newdimen\id@boxheight
\AtBeginDocument{%
  \setlength\@tempdima{\paperwidth}%
  \addtolength\@tempdima{-\textwidth}%
  \divide\@tempdima by 2
  \setlength\@tempdimb\marginparwidth
  \addtolength\@tempdimb\marginparsep
  \addtolength\@tempdimb{2pc}%
  \ifdim \@tempdima <\@tempdimb
     \@settopoint\@tempdimb
     \GenericError{Pointsize}{Pointsize Error: Marginpars disabled}{}{You made
```

```
      your \string\textwidth\space (\the\textwidth) and
      \string\marginparwidth (\the\marginparwidth) too wide.\MessageBreak
      The allowed value for margin space: (\the\@tempdima). Needed value:
      (\the\@tempdimb).\MessageBreak
      This is not enough,
      so I will set \string\marginparwidth\space  to 0pt.\MessageBreak
      Let's hope that fixes it.
     }%
     \marginparwidth \z@
     \marginparsep \z@
  \fi
  \ifdim \@tempdima <2pc
     \@tempdimb=\paperwidth
     \advance\@tempdimb by -4pc
     \@settopoint\@tempdimb
     \GenericError{Pointsize}{Pointsize Error: Invalid sizes given}{}{You
     made your \string\textwidth\space (\the\textwidth)
     wider than the available total\MessageBreak
     (Which is: \the\@tempdimb). Please press X and try again.
     }%
  \fi
  \oddsidemargin \@tempdima
  \evensidemargin \@tempdima
```

These calculations are a lot easier. `\textheight` should have been set already. This does not check for the correct placement of the identification line!!

```
  \setlength\@tempdima{\paperheight}
  \addtolength\@tempdima{-\footskip}
  \addtolength\@tempdima{-\headheight}
  \addtolength\@tempdima{-\headsep}
  \setlength\@tempdimb{\@tempdima}
  \addtolength\@tempdima{-\textheight}
  \divide\@tempdima by 2
  \ifdim \@tempdima <2pc
  \advance\@tempdimb by -4pc
  \@settopoint\@tempdimb
     \GenericError{Pointsize}{Pointsize Error: Invalid sizes given}{}{You
     made your \string\textheight\space (\the\textheight)
     more than the available total.\MessageBreak
     (Which is: \the\@tempdimb). Please press X and try again.
     }%
  \fi
  \setlength\topmargin{\@tempdima}
  \setlength\id@boxheight{\@tempdima}
  \advance\id@boxheight by -2pc
}
```

```
\setlength\footnotesep{6.65\p@}
\setlength{\skip\footins}{9\p@ \@plus 4\p@ \@minus 2\p@}
```

1.4. Lists

List default values

```
\setlength\partopsep{2\p@ \@plus 1\p@ \@minus 1\p@}
\setlength{\leftmargini}{2em}
\setlength{\leftmarginii}{2.2em}
\setlength{\leftmariniii}{1.87em}
\setlength{\leftmariniv}{1.7em}
\setlength{\leftmarginv}{1em}
\setlength{\leftmarginvi}{1em}
\setlength{\labelsep}{.4em}
\setlength{\labelwidth}{\leftmargini}
\addtolength{\labelwidth}{-\labelsep}
```

Note that lists below level 3 do nothing else then readjusting the `\labelwidth`. This results in very small labels for the inner lists.

```
\def\@listI{%
  \leftmargin \leftmargini
  \topsep  9\p@ \@plus 3\p@ \@minus 5\p@
  \partopsep 3\p@ \@plus 1\p@ \@minus 2\p@
  \itemsep 4.5\p@ \@plus 2\p@ \@minus 1\p@
  \parsep 4.5\p@ \@plus 2\p@ \@minus 1\p@ }
\def\@listii{%
  \leftmargin \leftmarginii
  \labelwidth \leftmarginii
  \advance\labelwidth by -\labelsep
  \topsep 4.5\p@ \@plus 2\p@ \@minus 1\p@
  \parsep 2\p@ \@plus 1\p@ \@minus 1\p@
  \itemsep \parsep}
\def\@listiii{%
  \leftmargin \leftmariniii
  \labelwidth \leftmariniii
  \advance\labelwidth by -\labelsep
  \topsep 2\p@ \@plus 1\p@ \@minus 1\p@
  \parsep \z@
  \partopsep 1\p@ \@plus 0\p@ \@minus 1\p@
  \itemsep \topsep}
\def\@listiv{%
  \setlength{\leftmargin}{\leftmariniv}%
  \setlength{\labelwidth}{\leftmariniv}%
  \addtolength{\labelwidth}{-\labelsep}}
\def\@listv{%
```

```
  \setlength{\leftmargin}{\leftmarginv}%
  \setlength{\labelwidth}{\leftmarginv}%
  \addtolength{\labelwidth}{-\labelsep}}
\def\@listvi{%
  \setlength{\leftmargin}{\leftmarginvi}%
  \setlength{\labelwidth}{\leftmarginvi}%
  \addtolength{\labelwidth}{-\labelsep}}
\let\@listi\@listI
\@listi
```

1.5. Float separation parameters

Separation on text pages.

```
\setlength\floatsep{12\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\textfloatsep{20\p@ \@plus 2\p@ \@minus 4\p@}
\setlength\intextsep{12\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\dblfloatsep{12\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\dbltextfloatsep{20\p@ \@plus 2\p@ \@minus 4\p@}
```

Separation on float pages

```
\setlength\@fptop{0\p@ \@plus 1fil}
\setlength\@fpsep{8\p@ \@plus 2fil}
\setlength\@fpbot{0\p@ \@plus 1fil}
\setlength\@dblfptop{0\p@ \@plus 1fil}
\setlength\@dblfpsep{8\p@ \@plus 2fil}
\setlength\@dblfpbot{0\p@ \@plus 1fil}

\endinput
```

klut12.clo

Kluwer Academic Publishers

1998/02/11

Abstract. This internal file takes care of list definitions and 'general' point size options. This is a tight version.

Table of Contents

1. Implementation

```
\ProvidesFile{klut12.clo}[\filedate ]
```

1.1. Section size commands

added command: `\little`. This between `\scriptsize` and `\tiny`. Allowed type provided values: 6/7, 8/9, 9/10.5, 10/11.5, 11/12.5 12/13.5, 14/18, 17/22, 20/25, 25/30.

```
\renewcommand\normalsize{%
   \@setfontsize\normalsize\@xiipt{13.5}%
   \abovedisplayskip 11\p@ \@plus 2\p@ \@minus5\p@
   \abovedisplayshortskip 1\p@ \@plus 3\p@
   \belowdisplayshortskip 7\p@ \@plus 3\p@ \@minus3\p@
   \belowdisplayskip \abovedisplayskip
   \let\@listi\@listI}
\normalsize
\newcommand\small{%
   \@setfontsize\small\@xipt{12.5}%
   \abovedisplayskip 8.5\p@ \@plus3\p@ \@minus4\p@
   \abovedisplayshortskip \z@ \@plus2\p@
   \belowdisplayshortskip 4\p@ \@plus2\p@ \@minus2\p@
   \def\@listi{\leftmargin\leftmargini
               \topsep 4\p@ \@plus2\p@ \@minus2\p@
               \parsep 2\p@ \@plus\p@ \@minus\p@
               \itemsep \parsep}%
   \belowdisplayskip \abovedisplayskip
}
\newcommand\footnotesize{%
   \@setfontsize\footnotesize\@xpt{11.5}%
   \abovedisplayskip 6\p@ \@plus2\p@ \@minus4\p@
   \abovedisplayshortskip \z@ \@plus\p@
   \belowdisplayshortskip 3\p@ \@plus\p@ \@minus2\p@
   \def\@listi{\leftmargin\leftmargini
               \topsep 3\p@ \@plus\p@ \@minus\p@
               \parsep 2\p@ \@plus\p@ \@minus\p@
               \itemsep \parsep}%
   \belowdisplayskip \abovedisplayskip
}
\newcommand\scriptsize{\@setfontsize\scriptsize\@ixpt{10.5}}
\newcommand\little{\@setfontsize\little\@viiipt{9}}
\newcommand\tiny{\@setfontsize\tiny\@vipt\@viipt}
```

```
\newcommand\large{\@setfontsize\large\@xivpt{18}}
\newcommand\Large{\@setfontsize\Large\@xviipt{22}}
\newcommand\LARGE{\@setfontsize\LARGE\@xxpt{25}}
\newcommand\huge{\@setfontsize\huge\@xxvpt{30}}
\newcommand\Huge{\@setfontsize\Huge\@xxvpt{30}}
```

1.2. Various values

Note that `\hoffset` and `\voffset` are both compensated. This makes the calculations below easier.

```
\setlength\hoffset{-1in}
\setlength\voffset{-1in}
\setlength\parindent {14\p@}
\setlength\headheight{12\p@}
\setlength\headsep   {12\p@}
\setlength\topskip   {10\p@}
\setlength\footskip  {27.5\p@}
\setlength\marginparsep{10pt}
\setlength\marginparpush{5\p@}
\setlength\maxdepth  {.5\topskip}
\setlength\@maxdepth\maxdepth
\setlength\columnsep{12pt}
\setlength\columnseprule{0pt}
\setlength\fboxsep{3pt}
\setlength\fboxrule{.4pt}
```

1.3. Textheight and textwidth

These are the main reason for the existence of these files. For some stupid reason, LaTeX calculates textwidth out of `\paperwidth`. We did want to support letter paper, but our `\textwidth` is fixed, with the margins being calculated.

Presume `\textwidth` and `\marginparwidth` are set in the stylefile, or we're in trouble. The `2pc` value is used to compensate for the 'dead' corners in most laserprinters.

Calculations are done 'AtBeginDocument' to allow changes made in the preamble and later on in the stylefile.

```
\newdimen\id@boxheight
\AtBeginDocument{%
  \setlength\@tempdima{\paperwidth}%
  \addtolength\@tempdima{-\textwidth}%
```

```
\divide\@tempdima by 2
\setlength\@tempdimb\marginparwidth
\addtolength\@tempdimb\marginparsep
\addtolength\@tempdimb{2pc}%
\ifdim \@tempdima <\@tempdimb
   \@settopoint\@tempdimb
   \GenericError{Pointsize}{Pointsize Error: Marginpars disabled}{}{You made
    your \string\textwidth\space (\the\textwidth) and
    \string\marginparwidth (\the\marginparwidth) too wide.\MessageBreak
    The allowed value for margin space: (\the\@tempdima). Needed value:
    (\the\@tempdimb).\MessageBreak
    This is not enough,
    so I will set \string\marginparwidth\space  to 0pt.\MessageBreak
    Let's hope that fixes it.
   }%
   \marginparwidth \z@
   \marginparsep \z@
\fi
\ifdim \@tempdima <2pc
   \@tempdimb=\paperwidth
   \advance\@tempdimb by -4pc
   \@settopoint\@tempdimb
   \GenericError{Pointsize}{Pointsize Error: Invalid sizes given}{}{You
   made your \string\textwidth\space (\the\textwidth)
   wider than the available total\MessageBreak
   (Which is: \the\@tempdimb). Please press X and try again.
   }%
\fi
\oddsidemargin \@tempdima
\evensidemargin \@tempdima
```

These calculations are a lot easier. `\textheight` should have been set already. This does not check for the correct placement of the identification line!!

```
\setlength\@tempdima{\paperheight}
\addtolength\@tempdima{-\footskip}
\addtolength\@tempdima{-\headheight}
\addtolength\@tempdima{-\headsep}
\setlength\@tempdimb{\@tempdima}
\addtolength\@tempdima{-\textheight}
\divide\@tempdima by 2
\ifdim \@tempdima <2pc
\advance\@tempdimb by -4pc
\@settopoint\@tempdimb
```

```
    \GenericError{Pointsize}{Pointsize Error: Invalid sizes given}{}{You
    made your \string\textheight\space (\the\textheight)
    more than the available total.\MessageBreak
    (Which is: \the\@tempdimb). Please press X and try again.
    }%
  \fi
  \setlength\topmargin{\@tempdima}
  \setlength\id@boxheight{\@tempdima}
  \advance\id@boxheight by -2pc
}

\setlength\footnotesep{6.65\p@}
\setlength{\skip\footins}{12\p@ \@plus 4\p@ \@minus 2\p@}
```

1.4. Lists

List default values

```
\setlength\partopsep{2\p@ \@plus 1\p@ \@minus 1\p@}
\setlength{\leftmargini}{2em}
\setlength{\leftmarginii}{2.2em}
\setlength{\leftmariniii}{1.87em}
\setlength{\leftmariniv}{1.7em}
\setlength{\leftmarinv}{1em}
\setlength{\leftmarinvi}{1em}
\setlength{\labelsep}{.4em}
\setlength{\labelwidth}{\leftmargini}
\addtolength{\labelwidth}{-\labelsep}
```

Note that lists below level 3 do nothing else then readjusting the `\labelwidth`. This results in very small labels for the inner lists.

```
\def\@listI{%
  \leftmargin \leftmargini
  \topsep  11\p@ \@plus 3\p@ \@minus 5\p@
  \partopsep 4.5\p@ \@plus 1\p@ \@minus 2\p@
  \itemsep 6\p@ \@plus 2\p@ \@minus 1\p@
  \parsep 6\p@ \@plus 2\p@ \@minus 1\p@ }
\def\@listii{%
  \leftmargin \leftmarginii
  \labelwidth \leftmarginii
  \advance\labelwidth by -\labelsep
  \topsep 6\p@ \@plus 2\p@ \@minus 1\p@
  \parsep 3\p@ \@plus 1\p@ \@minus 1\p@
```

```
  \itemsep \parsep}
\def\@listiii{%
  \leftmargin \leftmarginiii
  \labelwidth \leftmarginiii
  \advance\labelwidth by -\labelsep
  \topsep 2\p@ \@plus 1\p@ \@minus 1\p@
  \parsep \z@
  \partopsep 1\p@ \@plus 0\p@ \@minus 1\p@
  \itemsep \topsep}
\def\@listiv{%
  \setlength{\leftmargin}{\leftmarginiv}%
  \setlength{\labelwidth}{\leftmarginiv}%
  \addtolength{\labelwidth}{-\labelsep}}
\def\@listv{%
  \setlength{\leftmargin}{\leftmarginv}%
  \setlength{\labelwidth}{\leftmarginv}%
  \addtolength{\labelwidth}{-\labelsep}}
\def\@listvi{%
  \setlength{\leftmargin}{\leftmarginvi}%
  \setlength{\labelwidth}{\leftmarginvi}%
  \addtolength{\labelwidth}{-\labelsep}}
\let\@listi\@listI
\@listi
```

1.5. Float separation parameters

Separation on text pages.

```
\setlength\floatsep{12\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\textfloatsep{24\p@ \@plus 2\p@ \@minus 4\p@}
\setlength\intextsep{12\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\dblfloatsep{12\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\dbltextfloatsep{24\p@ \@plus 2\p@ \@minus 4\p@}
```

Separation on float pages

```
\setlength\@fptop{0\p@ \@plus 1fil}
\setlength\@fpsep{10\p@ \@plus 2fil}
\setlength\@fpbot{0\p@ \@plus 1fil}
\setlength\@dblfptop{0\p@ \@plus 1fil}
\setlength\@dblfpsep{10\p@ \@plus 2fil}
\setlength\@dblfpbot{0\p@ \@plus 1fil}

\endinput
```

klu105.clo

Kluwer Academic Publishers

1998/02/11

Abstract. This internal file takes care of list definitions and 'general' point size options.

Table of Contents

1. Implementation

```
\ProvidesFile{klu105.clo}[\filedate ]
```

1.1. Section size commands

added command: `\little`. This between `\scriptsize` and `\tiny`. Allowed type provided values: 6/7, 7/8, 9/11, 10/11.5, 10.5/12, 11/13, 12/14, 14/18, 17/22, 20/25, 25/30.

```
\renewcommand\normalsize{%
   \@setfontsize\normalsize{10.5pt}{12}%
   \abovedisplayskip 10\p@ \@plus 2\p@ \@minus5\p@
   \abovedisplayshortskip \z@ \@plus 3\p@
   \belowdisplayshortskip 6\p@ \@plus 3\p@ \@minus3\p@
   \belowdisplayskip \abovedisplayskip
   \let\@listi\@listI}
\normalsize
\newcommand\small{%
   \@setfontsize\small\@xpt{11.5}%
   \abovedisplayskip 9\p@ \@plus3\p@ \@minus4\p@
   \abovedisplayshortskip \z@ \@plus2\p@
   \belowdisplayshortskip 5\p@ \@plus2\p@ \@minus2\p@
   \def\@listi{\leftmargin\leftmargini
               \topsep 4\p@ \@plus2\p@ \@minus2\p@
               \parsep 2\p@ \@plus\p@ \@minus\p@
               \itemsep \parsep}%
   \belowdisplayskip \abovedisplayskip
}
\newcommand\footnotesize{%
   \@setfontsize\footnotesize\@ixpt\@xipt
   \abovedisplayskip 6\p@ \@plus2\p@ \@minus4\p@
   \abovedisplayshortskip \z@ \@plus\p@
   \belowdisplayshortskip 3\p@ \@plus\p@ \@minus2\p@
   \def\@listi{\leftmargin\leftmargini
               \topsep 3\p@ \@plus\p@ \@minus\p@
               \parsep 2\p@ \@plus\p@ \@minus\p@
               \itemsep \parsep}%
   \belowdisplayskip \abovedisplayskip
}
\newcommand\scriptsize{\@setfontsize\scriptsize\@viiipt{9.5}}
\newcommand\little{\@setfontsize\little\@viipt\@viiipt}
\newcommand\tiny{\@setfontsize\tiny\@vipt\@viipt}
\newcommand\large{\@setfontsize\large\@xiipt{14}}
\newcommand\Large{\@setfontsize\Large\@xivpt{18}}
\newcommand\LARGE{\@setfontsize\LARGE\@xviipt{22}}
\newcommand\huge{\@setfontsize\huge\@xxpt{25}}
```

```
\newcommand\Huge{\@setfontsize\Huge\@xxvpt{30}}
```

1.2. Various values

Note that `\hoffset` and `\voffset` are both compensated. This makes the calculations below easier.

```
\setlength\hoffset{-1in}
\setlength\voffset{-1in}
\setlength\parindent {14\p@}
\setlength\headheight{12\p@}
\setlength\headsep   {13\p@}
\setlength\topskip   {10\p@}
\setlength\footskip  {27.5\p@}
\setlength\marginparsep{10pt}
\setlength\marginparpush{5\p@}
\setlength\maxdepth  {.5\topskip}
\setlength\@maxdepth\maxdepth
\setlength\columnsep{10pt}
\setlength\columnseprule{0pt}
\setlength\fboxsep{3pt}
\setlength\fboxrule{.4pt}
```

1.3. Textheight and textwidth

These are the main reason for the existence of these files. For some stupid reason, LaTeX calculates textwidth out of `\paperwidth`. We did want to support letter paper, but our `\textwidth` is fixed, with the margins being calculated.

Presume `\textwidth` and `\marginparwidth` are set in the stylefile, or we're in trouble. The `2pc` value is used to compensate for the 'dead' corners in most laserprinters.

Calculations are done 'AtBeginDocument' to allow changes made in the preamble and later on in the stylefile.

```
\newdimen\id@boxheight
\AtBeginDocument{%
  \setlength\@tempdima{\paperwidth}%
  \addtolength\@tempdima{-\textwidth}%
  \divide\@tempdima by 2
  \setlength\@tempdimb\marginparwidth
  \addtolength\@tempdimb\marginparsep
  \addtolength\@tempdimb{2pc}%
  \ifdim \@tempdima <\@tempdimb
     \@settopoint\@tempdimb
     \GenericError{Pointsize}{Pointsize Error: Marginpars disabled}{}{You made
```

```
      your \string\textwidth\space (\the\textwidth) and
      \string\marginparwidth (\the\marginparwidth) too wide.\MessageBreak
      The allowed value for margin space: (\the\@tempdima). Needed value:
      (\the\@tempdimb).\MessageBreak
      This is not enough,
      so I will set \string\marginparwidth\space  to 0pt.\MessageBreak
      Let's hope that fixes it.
     }%
     \marginparwidth \z@
     \marginparsep \z@
  \fi
  \ifdim \@tempdima <2pc
     \@tempdimb=\paperwidth
     \advance\@tempdimb by -4pc
     \@settopoint\@tempdimb
     \GenericError{Pointsize}{Pointsize Error: Invalid sizes given}{}{You
     made your \string\textwidth\space (\the\textwidth)
     wider than the available total\MessageBreak
     (Which is: \the\@tempdimb). Please press X and try again.
     }%
  \fi
  \oddsidemargin \@tempdima
  \evensidemargin \@tempdima
```

These calculations are a lot easier. `\textheight` should have been set already. This does not check for the correct placement of the identification line!!

```
  \setlength\@tempdima{\paperheight}
  \addtolength\@tempdima{-\footskip}
  \addtolength\@tempdima{-\headheight}
  \addtolength\@tempdima{-\headsep}
  \setlength\@tempdimb{\@tempdima}
  \addtolength\@tempdima{-\textheight}
  \divide\@tempdima by 2
  \ifdim \@tempdima <2pc
  \advance\@tempdimb by -4pc
  \@settopoint\@tempdimb
     \GenericError{Pointsize}{Pointsize Error: Invalid sizes given}{}{You
     made your \string\textheight\space (\the\textheight)
     more than the available total.\MessageBreak
     (Which is: \the\@tempdimb). Please press X and try again.
     }%
  \fi
  \setlength\topmargin{\@tempdima}
  \setlength\id@boxheight{\@tempdima}
  \advance\id@boxheight by -2pc
}
```

```
\setlength\footnotesep{6.65\p@}
\setlength{\skip\footins}{9\p@ \@plus 4\p@ \@minus 2\p@}
```

1.4. Lists

List default values

```
\setlength\partopsep{2\p@ \@plus 1\p@ \@minus 1\p@}
\setlength{\leftmargini}{2em}
\setlength{\leftmarginii}{2.2em}
\setlength{\leftmariniii}{1.87em}
\setlength{\leftmariniv}{1.7em}
\setlength{\leftmarginv}{1em}
\setlength{\leftmarginvi}{1em}
\setlength{\labelsep}{.4em}
\setlength{\labelwidth}{\leftmargini}
\addtolength{\labelwidth}{-\labelsep}
```

Note that lists below level 3 do nothing else then readjusting the `\labelwidth`. This results in very small labels for the inner lists.

```
\def\@listI{%
  \leftmargin \leftmargini
  \topsep  9\p@ \@plus 3\p@ \@minus 5\p@
  \partopsep 3\p@ \@plus 1\p@ \@minus 2\p@
  \itemsep 4.5\p@ \@plus 2\p@ \@minus 1\p@
  \parsep 4.5\p@ \@plus 2\p@ \@minus 1\p@ }
\def\@listii{%
  \leftmargin \leftmarginii
  \labelwidth \leftmarginii
  \advance\labelwidth by -\labelsep
  \topsep 4.5\p@ \@plus 2\p@ \@minus 1\p@
  \parsep 2\p@ \@plus 1\p@ \@minus 1\p@
  \itemsep \parsep}
\def\@listiii{%
  \leftmargin \leftmariniii
  \labelwidth \leftmariniii
  \advance\labelwidth by -\labelsep
  \topsep 2\p@ \@plus 1\p@ \@minus 1\p@
  \parsep \z@
  \partopsep 1\p@ \@plus 0\p@ \@minus 1\p@
  \itemsep \topsep}
\def\@listiv{%
  \setlength{\leftmargin}{\leftmariniv}%
  \setlength{\labelwidth}{\leftmariniv}%
  \addtolength{\labelwidth}{-\labelsep}}
\def\@listv{%
```

```
  \setlength{\leftmargin}{\leftmarginv}%
  \setlength{\labelwidth}{\leftmarginv}%
  \addtolength{\labelwidth}{-\labelsep}}
\def\@listvi{%
  \setlength{\leftmargin}{\leftmarginvi}%
  \setlength{\labelwidth}{\leftmarginvi}%
  \addtolength{\labelwidth}{-\labelsep}}
\let\@listi\@listI
\@listi
```

1.5. Float separation parameters

Separation on text pages.

```
\setlength\floatsep{12\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\textfloatsep{20\p@ \@plus 2\p@ \@minus 4\p@}
\setlength\intextsep{12\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\dblfloatsep{12\p@ \@plus 2\p@ \@minus 2\p@}
\setlength\dbltextfloatsep{20\p@ \@plus 2\p@ \@minus 4\p@}
```

Separation on float pages

```
\setlength\@fptop{0\p@ \@plus 1fil}
\setlength\@fpsep{8\p@ \@plus 2fil}
\setlength\@fpbot{0\p@ \@plus 1fil}
\setlength\@dblfptop{0\p@ \@plus 1fil}
\setlength\@dblfpsep{8\p@ \@plus 2fil}
\setlength\@dblfpbot{0\p@ \@plus 1fil}

\endinput
```